William Breidenthal

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EDUCATION

Bachelor of Science, Electrical Engineering — June 2012
University of California San Diego, GPA 3.14

Relevant Coursework: Microwave Systems and Circuits, Analog Integrated Circuits, Semiconductor Physics, Linear Electronic Systems, Data Networks, and Computer Interfacing.

TECHNICAL SKILLS

- Design and simulation of circuits using PSPICE, LTspice, Cadence Virtuoso, and Agilent ADS.
- Programming in C, Assembly, MATLAB, Verilog, PHP, and Javascript.
- Develop embedded applications for Atmel AVR, ARM Cortex-M3, and ARM7-TDMI.
- Verilog FPGA development using Xilinx ISE WebPACK and Altera Quartus II.
- Troubleshooting and prototyping utilizing tools including oscilloscopes, multimeters, logic analyzers, function generators, frequency counters, DC power supplies, and network analyzers.
- Schematic capture and board-level layout of analog and digital circuits using Cadsoft EAGLE.

PROJECT EXPERIENCE

ViaCar - Senior Design Project — October 2009 - June 2012
Project Team Lead - Hardware Engineer — UCSD, La Jolla, CA

- Coordinated a team of 3 to produce a competitive 1/10th scale autonomous vehicle.
- Designed active analog multi-order Sallen-Key bandpass and lowpass filters.
- Fabricated multiple mixed signal PCBs for signal filtering, interfacing, and DC motor control.
- Wrote embedded control algorithms in C for Atmel AVR and ARM Cortex-M3 microcontrollers.
- Participated in autonomous robotics competitions at UC San Diego and UC Davis.

Micromouse — September 2011 - May 2012
Project Lead - Hardware and Software Engineer — UCSD, La Jolla, CA

- Created an autonomous maze solving robotic 'mouse' exclusively from lab stocked parts.
- Designed analog infrared distance sensors, Schmitt triggers, and optical encoders.
- Combined multiple sensor input in a PID controller for navigation and collision avoidance.
- Integrated XBee 802.15.4 for wireless control and debugging.

PROFESSIONAL EXPERIENCE

OpenLPC — May 2011 - September 2011
Hardware Engineer Intern — La Jolla, CA

- Produced development boards based on NXP's LPC1769 and LPC2148 microcontrollers.
- Integrated analog audio, USB, and Ethernet PHY ICs on multi-layer printed circuit boards.
- Assembled, programmed, debugged, reworked, and verified over 200 circuit boards.
- Assisted in customer support of the development boards.

Leucadia Cyclery — January 2004 - Present
Web Programmer, Mechanic — Leucadia, CA

- Designed and supported the store website written in PHP, HTML, CSS, and Javascript.
- Maintained, assembled, and modified a variety of new and used bicycles.
- Created and maintained an inventory of bicycle stock and sales.
- Managed store opening and closing, and assisted customers with sales and support.